Please replace paragraph "0049" with the following paragraph:

--Polymer synthesis and preparation. Polymers were generally dissolved in tetrahydofuran, except for poly(4-vinylpyridine) and poly(vinylpyrrolidone), which were dissolved in ethanol, and poly(ethylene-co-vinyl acetate)(18% vinylacetate), 1,2-poly(butadiene), and poly(butadiene)(36% cis and 55% trans 1-4), which was dissolved in toluene. Each polymer (160 mg) was dissolved in its respective solvent (20 ml) either at room temperature or by heating to 35-40 °C for several hours. Carbon black (40 mg) was added and the suspension sonicated for at least 20 minutes.--

Please replace equation "(9)" at page 33 with the following rewritten equation:

$$-- \quad pI_{50}=0.48\log P-0.65\cdot M-0.31\cdot A-0.60 \quad --$$

In the claims:

Claims not amended are marked "Reiterated".

Please amend claims 1, 3-5, 7-8, and 12 as follows:

1. (Amended) An analyte screening system, comprising:

a sensor array comprising a plurality of different differentially responsive sensors;

a measuring device, connected to the sensor array; and

a computer;

the measuring device detecting a signal from each of the plurality of different differentially responsive sensors when the sensor array is contacted with an analyte of interest

and the computer assembling the signals from each of the sensors in the array into a sensor array signal profile;

wherein the computer is operative to compare the sensor array signal profile to at least one previously obtained signal profile from a standard sample not including the analyte of interest and having a known specific activity, chemical or physical property, or function, wherein the comparison of the sensor array signal profile to the at least one previously obtained signal profile is indicative of a specific activity, chemical or physical property, or function of the analyte of interest.

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2. The system of claim 1, wherein the analyte comprises a chemical.

3. (Amended) The system of claim 2, wherein the chemical comprises a biochemical.

4. (Amended) The system of claim 3, wherein the biochemical is selected from the group consisting of a lipid, a hormone, a fatty acid, a nucleic acid, a polypeptide, and a carbohydrate.

5. (Amended) The system of claim 4, wherein the polypeptide is selected from the group consisting of an antibody, an enzyme, and a protein.

6. The system of claim 5, wherein the antibody is a monoclonal antibody, polyclonal antibody, humanized antibody, or fragments thereof.

7. (Amended) The system of claim 5, wherein the enzyme is selected from the group consisting of lipases, esterases, proteases, glycosidases, glycosyl transferases, phosphatases, kinases, mono- and dioxygenases, haloperoxidases, lignin peroxidases, diarylpropane peroxidases, eposide hydrolases, nitrile hydrotases, nitrilases, transaminases, amidases, and acylases.

8. (Amended) The system of claim 1, wherein the specific activity is selected from the group consisting of an enzymatic activity, a binding activity, an inhibitory activity, and a modulating activity.

9. The system of claim 1, wherein the signal profile of the standard sample is derived from a library.

10. The system of claim 9, wherein the library is generated by a neural network.

11. The system of claim 1, wherein the different differentially responsive sensors change optically, electrically, magnetically, mechanically, physically, or a combination thereof.

12. (Amended) The system of claim 1, wherein the different differentially responsive sensors are selected from the group consisting of crystalline colloidal array (CCA) containing sensors, metal oxide sensors, dye-impregnated polymers coated onto beads or optical fibers, bulk conducting organic polymers,

capacitance sensors, chemically-sensitive resistor sensors, and combinations thereof.

13. The system of claim 12, wherein the chemically-sensitive resistor sensors are comprised of regions of a non-conductive material and regions of a conductive material compositionally different than the non-conductive material, each resistor providing an electrical path through the regions of conductive and non-conductive material, wherein interaction of the molecule with the resistor provides a change in resistance in the resistor.

14. The system of claim 1, wherein the chemical or physical property is selected from the group consisting of side groups, charge, hydrophobicity, polarity, molecular size or shape, and chirality.

15. The system of claim 1, wherein the different differentially responsive sensors are chemically sensitive resistors.